

(19) **Federal Republic of Germany**

German Patent Office

(12) **Utility Model**

U1

(11) **Register number** **G 89 11 663.1**

(51) **Original class** **B650 5/42**

(22) **Application date** **30 September 89**

(47) **Registration date** **29 March 90**

(43) **Announcement
in Patentblatt** **10 May 90**

(54) **Designation of subject matter**
 Box body with lid

(71) **Name and address of owner**
 Bergk, Karl Heinz, 5000 Köln, DE

(74) **Name and address of representative**
 Leineweber, J., Dipl.-Phys., Patent Attorney, 5000 Köln

Box body with lid

Species: Closures of cardboard sheets cut in one piece for shipping packages of cardboard sheets

Prior art: There is no known closure, which, on the one hand, encloses rapidly and securely the packet intended for shipping, and, on the other hand, can again be undone rapidly and without material damage, and can do so even if repeated several times.

Criticism of

prior art: All previously customary closures of cardboard sheet cut of one piece with the material of the packaging, for shipping packagings of any type, *inter alia* for shipping via the postal service of so-called merchandise shipments, are inadequate to such an extent that packages closed only with them are excluded from transport according to unanimous regulations of all postal enterprises. In particular, the so-called merchandise shipments closed therewith are improperly closed, since during inspections by the postal service and/or customs they cannot be opened rapidly and readily and without material damage and subsequently be rapidly and securely closed again by the inspector.

In particular, the so-called Stone closure opens already after a weight shift of the package content; the content first presses against the tongue and then presses it out of its insertion slot and subsequently the small tab out of its insertion slot.

Task: To invent a closure of cardboard sheets cut of one piece for shipping packages, which can be handled securely and yet easily and without material damage and which can be utilized as often as desired.

Solution: 1) and 2) and 3) The protuberances, their insertion slots with slide
The lid of the box body is cut with an adjoining flap of an approximately 2 mm greater width.

The margins of the two narrow sides of this flap are notched, for example cut into several, for example three, so-called protuberances one closely succeeding the other, each of which is semicircular.

At those sites at which the teeth or protuberances are in the position of the flap inserted into the box body, so-called insertion slots, corresponding to their number, size and shape, are cut into the cardboard; thus directly behind the two perpendicular front edges of the box body at its transverse sides.

The vertical line formed by these insertion slots and the straight line only partially interrupted by it, is pressed as a continuous "slide" for the precise sliding-in or snapping-in of the teeth or protuberances on both sides approximately 1 mm into the cardboard and specifically from the inside to the outside. This can be carried out without problems by machine "hot pressing" of the material at these sites.

4) and 5) - the tongue and its interlock slot

On both sides of its center crease fold (plug-in fold) one nick each is cut out of the tongue, such that the inserted tongue at both sides of its insertion slot also snaps into it. For this purpose the tongue must be at least one half millimeter wider than its insertion slot.

Its insertion slot forms an "interlock" such that it does not, as previously, is only cut in a straight line into the cardboard. Rather, the two ends of this line are cut further at right angles to its vertical line upward up to a height of approximately 1 mm each. And the two ends open at the top of these "vertical cuts" are, in addition, connected with one another by a weak or very flat cut inner fold. The entire structure has the shape of a rectangle. The base line of the insertion slot must only be cut very thin, thus not, as is customary in other insertion slots, wide. In other words, the base line must be cut thinner than the thickness of the material of the tongue.

While it is consequently possible to slide or press the tongue with only a slight holding pressure inwardly into the narrow indent, which forms the base line of the "interlock", however, the interlock, due to the two vertical cuts, can nevertheless be pressed so far inwardly that it is possible to plug the tongue through. Hence also the slight inner fold. But subsequently the interlock bends gradually back in the direction of its starting position, where it abuts the subjacent surface of the tongue and now clamps it in. The particular surface of the tongue is roughened wherewith an additional clamping effect is attained.

New technical

effect: With these overall 5 innovations, the new technical effect is attained of a closure, which, on the one hand, is secure and which, on the other hand, can be opened again readily and free of damage for shipping packages of cardboard sheets. Additional closure means are no longer required.

For now not only a mere latching of an unfixed tab through an also unfixed tongue exists, but, instead of a small tab, a wide, slip-effective and fixedly secured flap, which is additionally blocked through a fixedly secured tongue.

Or expressed differently:

the securement object 'tab' and the securement object 'tongue' are each fixedly secured by themselves and independently, such that accident or weight displacement in the package cannot detach either of the two securement objects from their securements. This is only possible if carried out intentionally by human hands. And in this case this takes place without material damage.

Further advantages and details of the invention will be explained in conjunction with the embodiment examples depicted in Figures 1 to 3.

The folding cutout 1 depicted in Figure 1, shows segments 2 to 5, which form the bottom 6 (Fig. 2 and 3), the side walls 7 to 10, the lid 11 with its closure flap 12, a tongue 13 and adhesion tabs, not further denoted in detail. The flap 12 is laterally equipped with one protuberance 14 each (Fig. 1). It is also possible to provide one tooth or several teeth or protuberances 14 (for example two, Fig. 2 and 3). In addition, the flap 12 is

equipped with a slot 15, assigned to the tongue 13.

In the side walls 7 and 9 are disposed holes (openings) or insertion slots 16, into which snap the protuberances or teeth 14 when closing the box body.

To ensure the simple handling and secure snapping-in of the protuberances 14 into the openings 16, so-called slides 17 (Fig. 3) are provided, which extend parallel to the front edges of the box body and in which are disposed the openings 16.

Claims

1. Box body with a bottom, side walls and a lid as well as with a closure flap located on the front side of the lid, characterized in that the closure flap (12) extends over the entire length of the lid (11), that the narrow sides of the flap are each equipped with at least one tooth or a protuberance (14), and that assigned to the teeth or protuberances in two side walls (7, 9) of the box body are corresponding openings or insertion slots (16) specifically at those sites where the teeth or protuberances (14) are located when the flap (12) is inserted into the box body.

2. Box body as claimed in claim 1, characterized in that the openings or insertion slots (16) are located within slides (17), which extend from the inside outwardly and in which the narrow sides of the flap (12) are guided.
3. Box body as claimed in claim 1 or 2, characterized in that the flap (12) is approximately 2 mm wider than the lid (11) and that the depth of the slide (17) is approximately 1 mm.
4. Box body as claimed in claim 1, 2 or 3, characterized in that the flap (12) is equipped with a slot (15) and that to this slot is assigned a tongue (13).
5. Box body as claimed in one of claims 1 to 4, characterized in that it is cut of one piece (1).